Tasmania Rare Earths Pty Ltd

Exploration Licence 12/2022
Nile Road

Annual Report for the period 16/12/2022 to 15/12/2023

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1 Summary

Exploration Licence 12/2022, Nile Road, was granted to Tasmanian Rare Earths Pty Ltd, a wholly owned subsidiary of Venture Minerals Ltd, on 16th December 2022. Basement geology through the midlands is predominantly covered by quaternary sediments with minor outcrop of Jurassic Dolerite and locally Tertiary Basalt. The area now covered by EL12/2022 was previously lightly explored mainly for oil and gas. The first anniversary year work on EL12/2022 included historical data search, data compilation and review, targeting, prospecting, soil and rock sampling. Tasmanian Rare Earths intends to continue exploring for rare earth elements in this lease. A second round of soil sampling is planned based on the results from sampling during 2023, extending and infilling areas which were found to have higher grade assay results and extending out from areas which appear to have sampled adjacent to ground prospective for rare earth elements.

2 Introduction

Nile Road, EL12/2022, in the northern Midlands of Tasmania, was granted to Tasmanian Rare Earths Pty Ltd by Mineral Resources Tasmania (MRT) on 16th December 2022 It is almost completely covered by quaternary sediments overlying Mathinna sediments with minor basalt and dolerite outcrop.

3 Location and Access

Exploration Licence 12/2022 is an extensive lease located in the northern midlands of Tasmania and currently covers 138 km^2. It is located approximately 13 km by road southeast of Launceston CBD in farmland dotted with small townships from White Hills in the north to Nile to the south. The lease is stepped in shape, trending NW-SE following the direction of the South Esk River, a large buffer zone provided for a major catchment area for the water supply of the city of Launceston. EL12/2022 runs along the eastern boundary of two of the leases held by ABx in similar terrain with similar target commodities.

The land within the current tenement bounds is privately owned with agriculture being the main land use here. Sheep grazing occurs across most of the ground with some vineyards and wheat crops centred on iron rich laterite occurrences. There are numerous relict eucalypts standing singly in paddocks with small areas of minimally disturbed bushland. Dry eucalypt forest is the most common native vegetation in EL12/2022. There are lesser pockets of native grassland and minor scrubby heathland.

The topography of EL12/2022, despite its extent, is not widely varied with small, forested hills dotted around dominantly flat arable land. The elevation minimum is ~100 masl to a high of over 430 masl in the hill to the southeast of the lease.

Access is plentiful across the lease with many public roads, mostly gravel, throughout, diverting from the main sealed eponymous Nile Rd. The average rainfall in this area is >600mm per annum. This cool, temperate zone has diurnal maximums between 11 and 24 degrees across the year with frosts in winter from 4 days in the low-lying riverine areas to 60 or more in the hills.

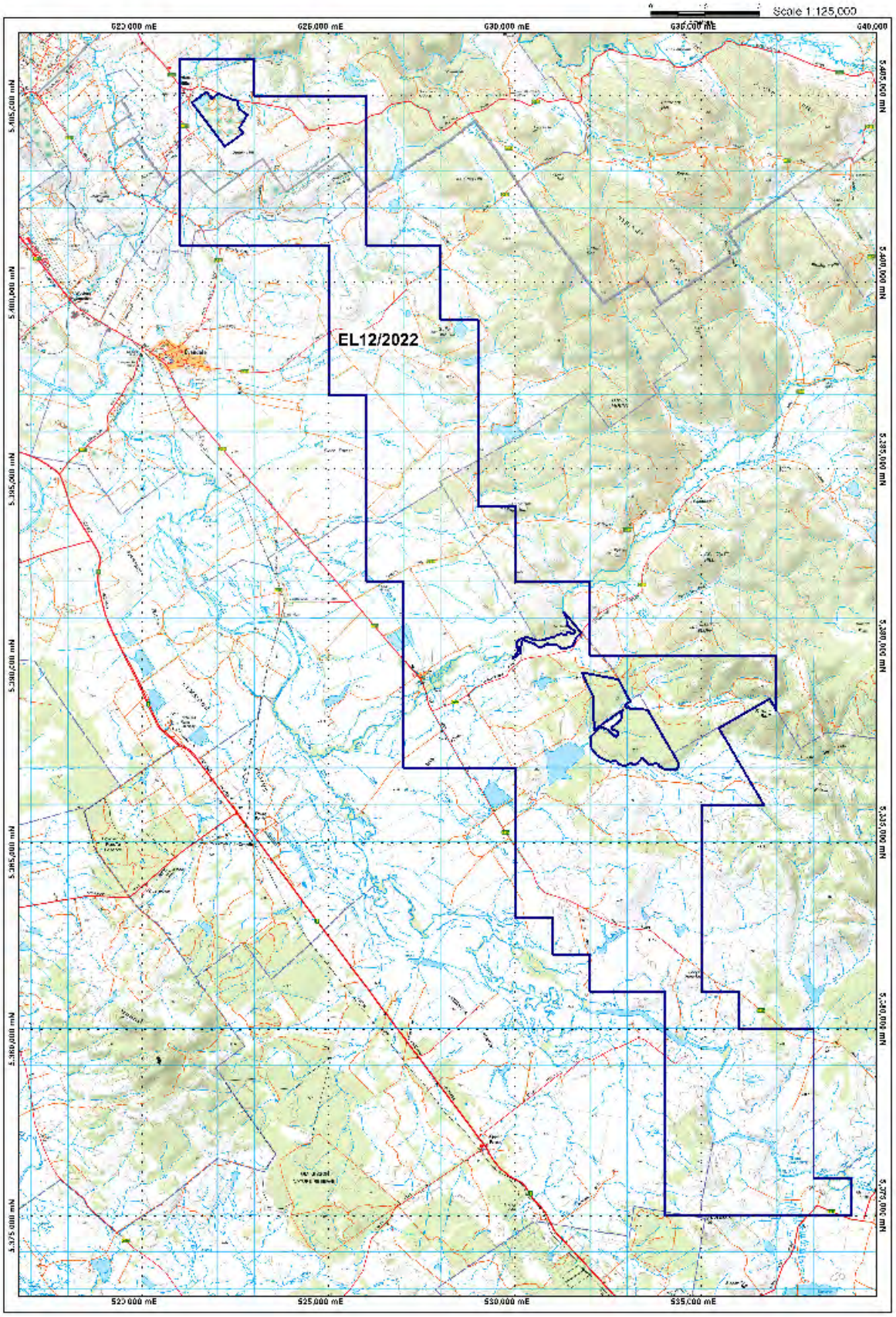

Figure 1: EL12/2022 Nile Rd Location Plan.

4 Exploration and Mining History

Exploration since the early twentieth century in the midlands of Tasmania was centred on locating energy sources. Initially oil seeps were identified in several areas (Twelvetrees, 1917) and later in the 1900s coal exploration in the Ordovician and Permian sediments of the southern and northern midlands respectively was the focus of exploration, summarised in Table 1. During the 21st Century, geothermal energy and bauxite deposits have been explored for in the area.

ABx4 conducted a reverse circulation (RC) drilling program in the area beginning in 2010 to explore for bauxite (Coyte and Rebek, 2011). The initial locus was the historic bauxite occurrence recorded in White Hills, then expanded to other lateritic zones in the vicinity, identified through study of the geomorphology around Evandale to identify partially weathered plateaus. Eight RC holes were drilled on Blessington Road, east of Evandale, and 11 holes drilled east of these in White Hills. ABx4 found the silica content in the RC samples to be too high, despite encouraging grades, and given the limited potential size of the targets, relinquished the lease in 2017 (Coyte, 2017).

Tenement ID	Company	Year from	Year to	Licence Type
EL5/1962	Tasmanian & Bass Strait Oil NL	1962	1962	Metallic minerals, atomic substances
EL15/1967	Sulzberger CG	1967	1971	NA
EL16/1972	Tenneco Australia Incorporated	1972	1973	Metallic minerals, atomic substances
EL6/1981	Victor Petroleum & Resources Ltd	1981	1981	NA
EL1/1988	Great South Land Minerals Ltd	1989	1993	Petroleum Products
SEL13/1998	Great South Land Ltd	1999	2004	Petroleum Products
SEL32/2003	OME Resources Australia Pty Ltd	2004	2005	Petroleum Products
SEL26/2005	KuTh Exploration Pty Ltd	2006	2014	Geothermal Substances
SEL5/2005	Overseas Energy Holdings Ltd	2005	2015	Petroleum Products
EL6/2010	ABx4 Pty Ltd	2010	2016	Metallic minerals, atomic substances
EL4/20210	ABx4 Pty Ltd	2010	2017	Metallic minerals, atomic substances
SEL5/2009	Empire Energy Corporation International	NA	NA	Petroleum Products

Table 1 – Summary of previous tenement holders and IDs of leases held over all or part of EL12/2022

5 Geological Setting

EL12/2022 lies across the Eastern Tasmanian Terrane with the basement geology comprising undeformed marine glacial sediments of the Late Carboniferous - Triassic Parmeener Supergroup, mostly covered by freshwater Quaternary and Tertiary Sediments and Tertiary Basalt with intrusions of Jurassic Dolerite. The Eastern Tasmanian Terrane is the southernmost extension of the Lachlan Fold Belt, characterised by corresponding paleocurrents identified on either side of the Bass Strait, in Lower Ordovician quartzose turbidites, and Early Devonian Mathinna Group sediments, and megakinks which have abrupt swings in the strikes of cleavage (Baillie et al., 1992).

The Lower Parmeener Supergroup was divided by Clarke and Banks (1975) into the Lower Marine Sequence consisting of glaciomarine and fossiliferous marine sediments, Lower Freshwater Sequence made up of non-marine sandstone and coal. The Upper Parmeener

Supergroup is divided according to age, rather than environment as the lower is, with the Upper Freshwater Marine sequence consisting of Permian fossiliferous marine siltstone and sandstone, the remainder and majority of the Upper Parmeener Supergroup being made up of Triassic non-marine rocks (Corbett et al., 2014).

The Parmeener Supergroup sediments were intruded in the Early Jurassic by dolerite, with exposures throughout Tasmania, around the time of the break-up of Gondwana. The Tasmanian dolerite is a small part of the Ferrar Magmatic Province, the majority of which occurs in a large swath across Antarctica. Locally the NW-trending Longford Basin contains Palaeocene-Eocene sediments with minor lignite, capped with basalt in the Evandale area (Corbett et al., 2014).

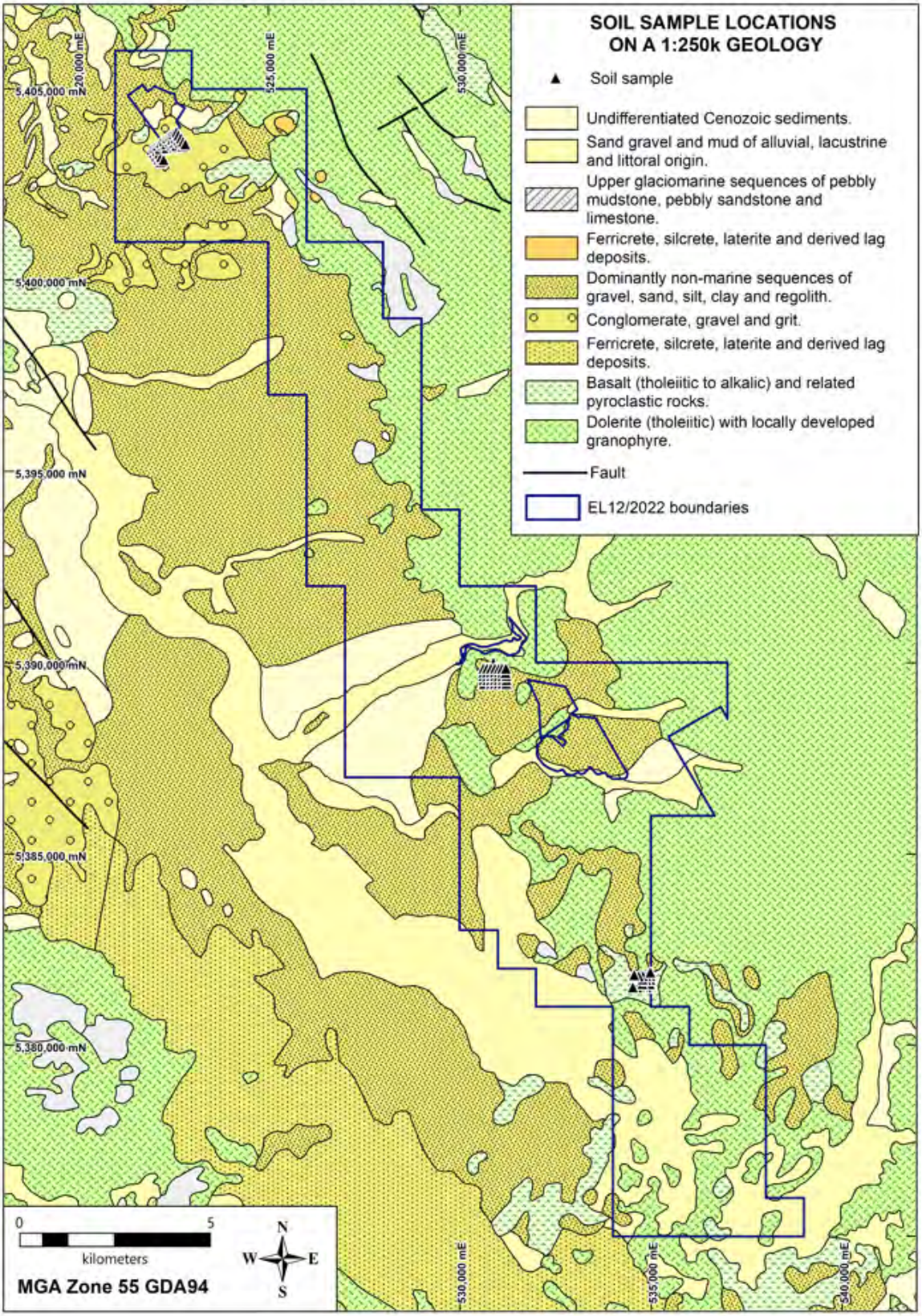

Figure 2: Collected EL12/2022 2023 soil samples on a 1:250,000 geology map.

6 Summary of Previous Work

Past exploration in the area now covered by exploration licence 12/2022 has been focussed on energy, predominantly coal, but also oil, gas, & geothermal energy. A government geologist of the early 20th century noted reports of exudations near Launceston between Relbia and Evandale (Twelvetrees, 1917). He dismissed this report as most likely being film of iron hydroxide rather than petroleum but also noted that the Tertiary sediments of the Launceston basin with its interbedded sand, clay and lignite was one of the most favourable beds for potential oil discovery in Tasmania.

2022-2023 Anniversary Year Exploration Activities

6.1 Target development and reconnaissance

A search for historic exploration and mining reports was conducted, then a soil sampling program targeting in particular bauxite and weathered Tertiary basalt areas for REEs. The proposed soil program was modified after reconnaissance field inspection by Venture Minerals' geologist. Specifically, some lateritic zones were found to occur in beyond those known from Tasmania geological survey maps. Five areas (A, B & C) in the northern, central and southern parts of EL12/2022 were selected for soil sampling. Sampling was to be on 100x100m spacings covering areas of c. 0.5 km^2 each (Figures 2 & 3).

The actual sampling was substantially less than planned because of cultural and agricultural constraints (new vineyard plantings, dam walls and other earthwork contamination, and recently ploughed land) and an uncooperative farm manager.

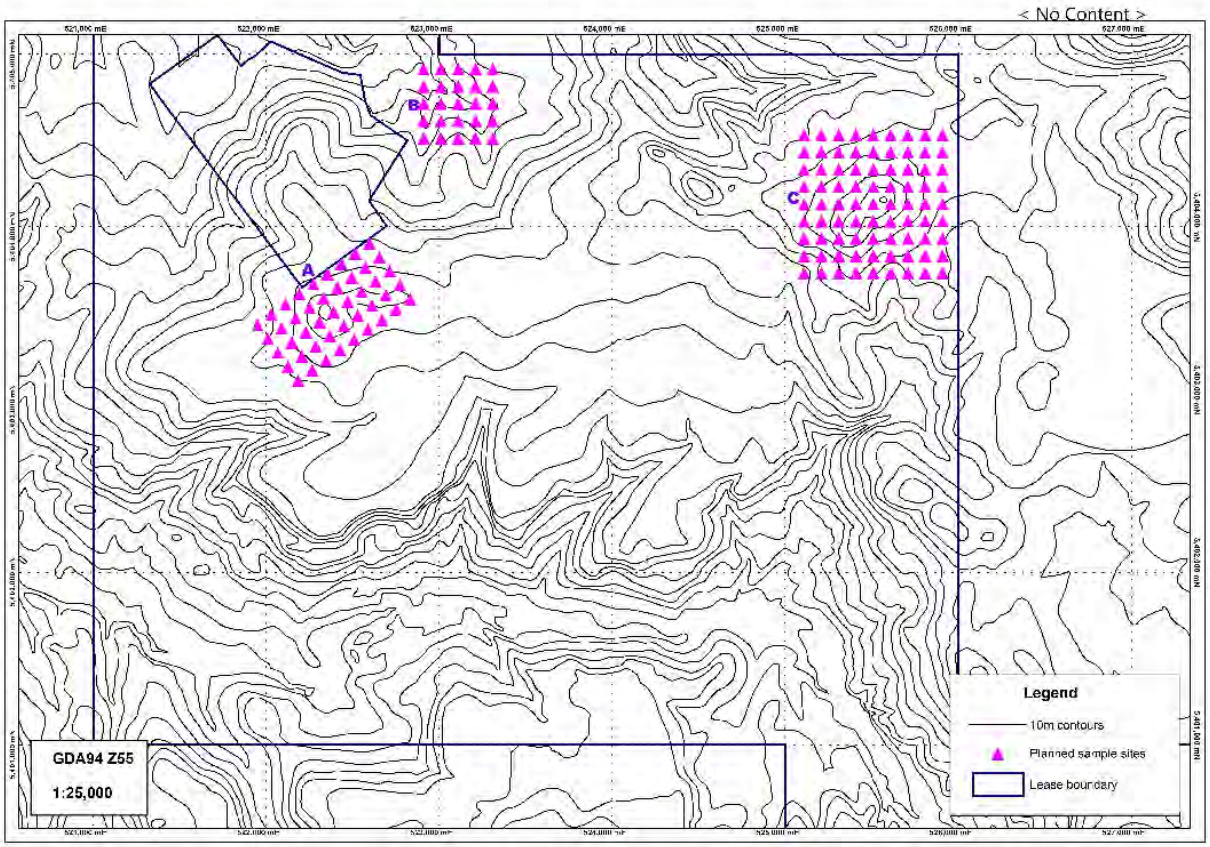

Figure 3: 2023 Planned soil sample grids in the northern section of EL12/2022

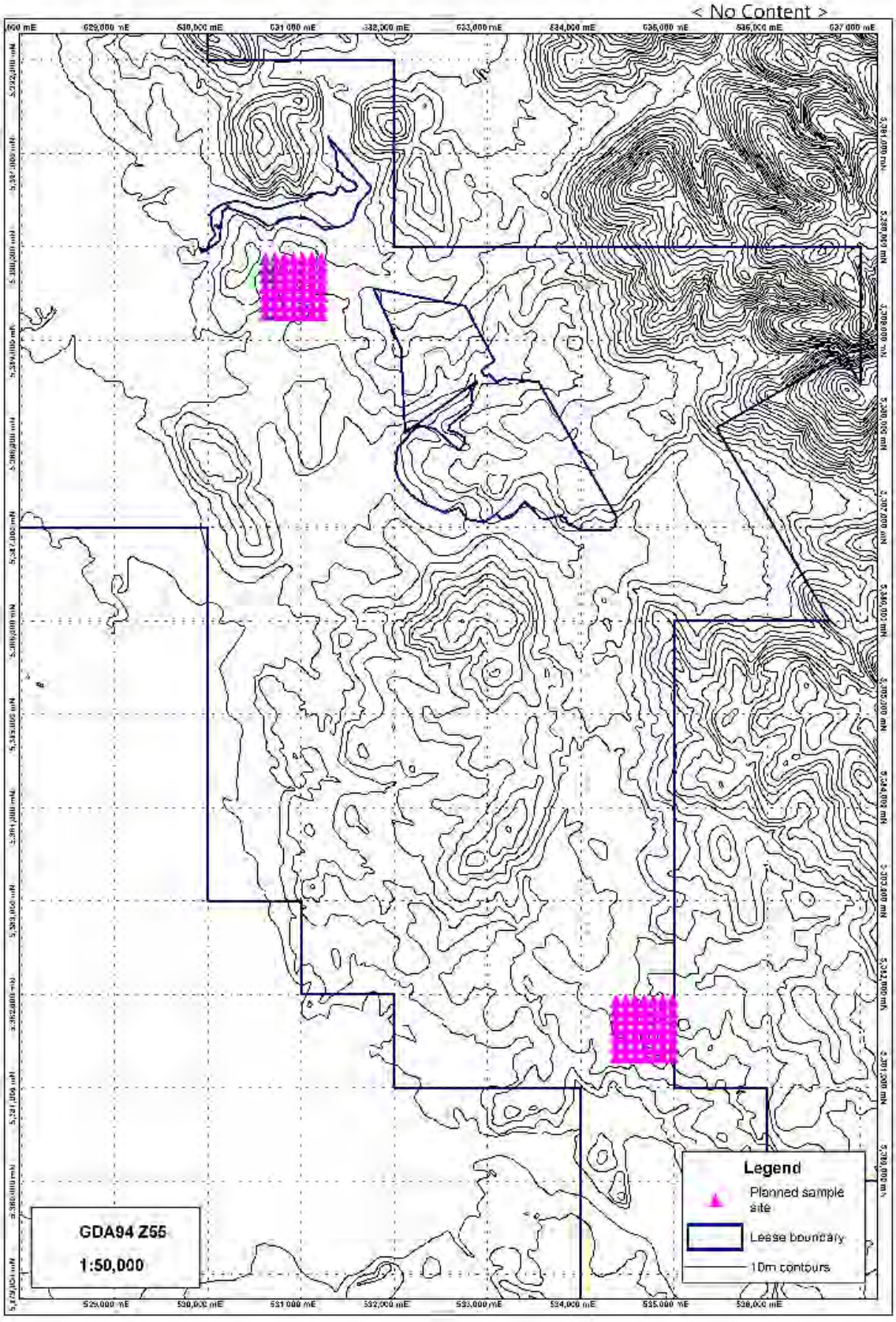

Figure 3: 2023 Planned soil sample grids D & E in the central and southern part of EL12/2022

6.2 Soil sampling

The northern area (grids A, B & C) with bauxite and basalt was a priority target area and whilst some sampling was undertaken around the vineyards, the planned program was significantly reduced on the basis that such an amount of infrastructure would make higher impact exploration activities difficult and likely preclude development should a REE deposit be identified.

Most of grid area A (Figure 4) was sampled except the southern edge where the paddocks had been very recently ploughed and planted with a potato crop, there was an active masked lapwing nest and a small dam. Areas B & C were scantly sampled upon encountering additional vineyards and private residences than had been noted during desktop planning.

Area D was sampled almost entirely as planned, only one sample left due to the edge of a dam.

Area E was left incomplete after a farm manager demanded Venture field assistants leave the site, despite adequate written notice having been provided prior to sampling.

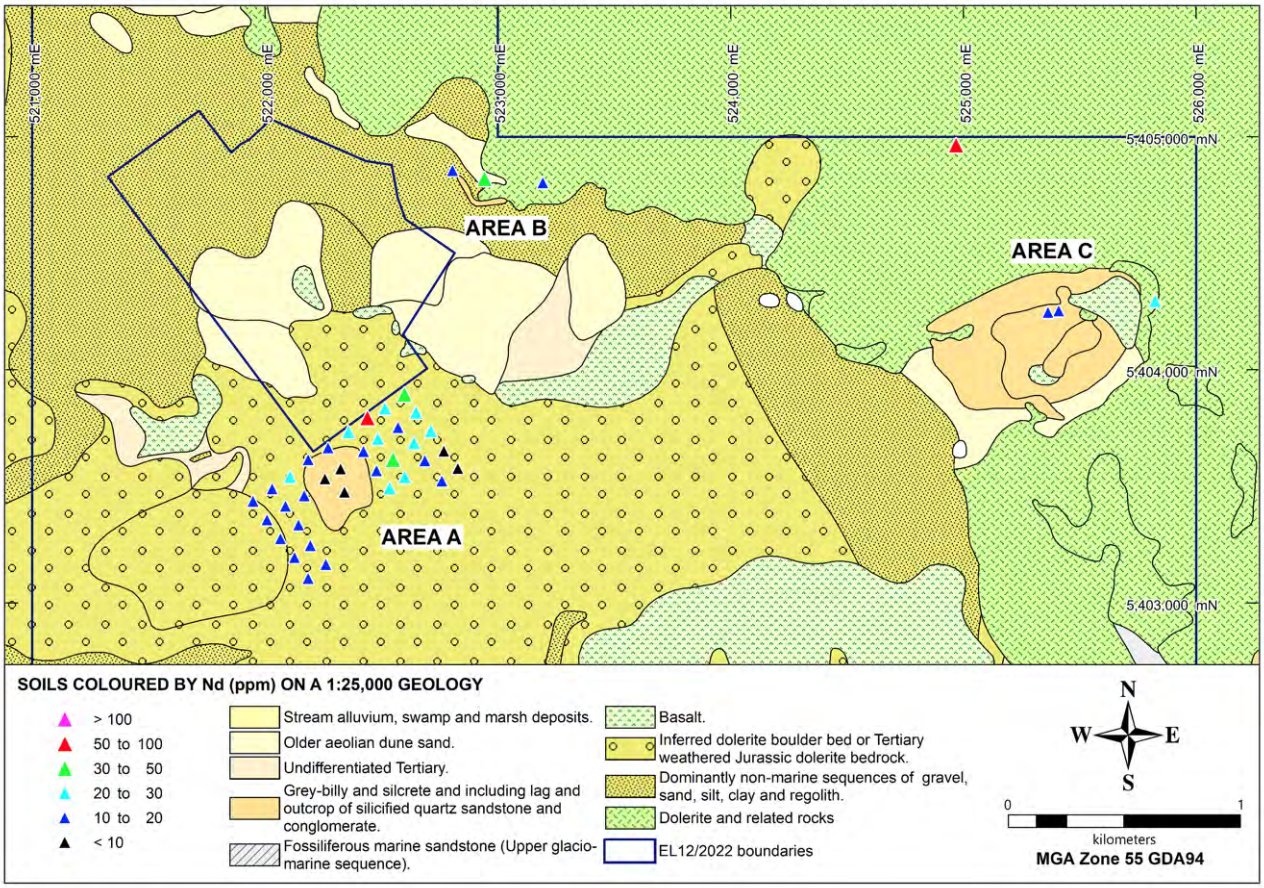

Figure 4: Nd ppm by Li borate fusion ICP-MS Area A in northern part of EL12/2022. Areas B & C only partially sampled due to access issues with private residences, vineyards precluding sampling.

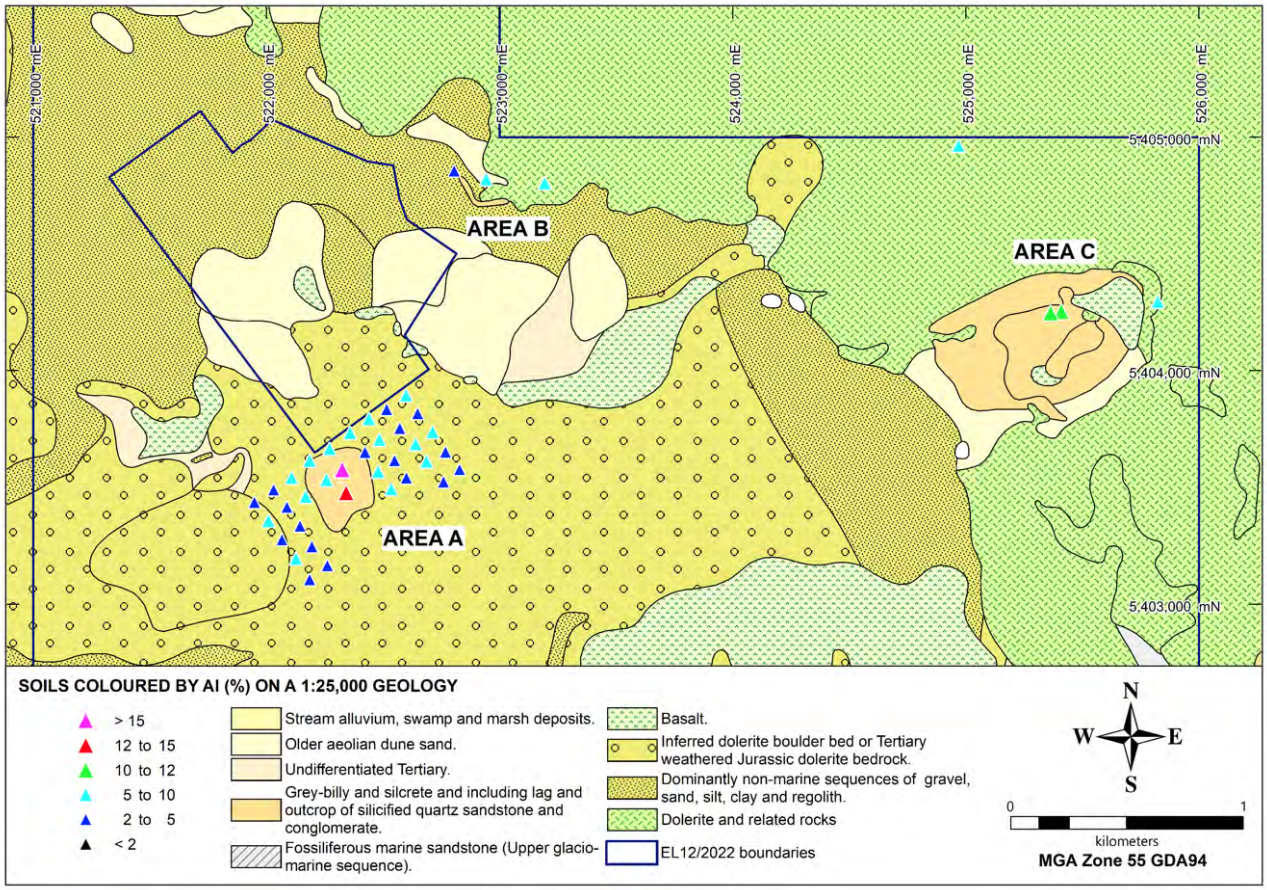

Figure 5: 2023 soils coloured by Al (%) on a 1:25,000 geology map.

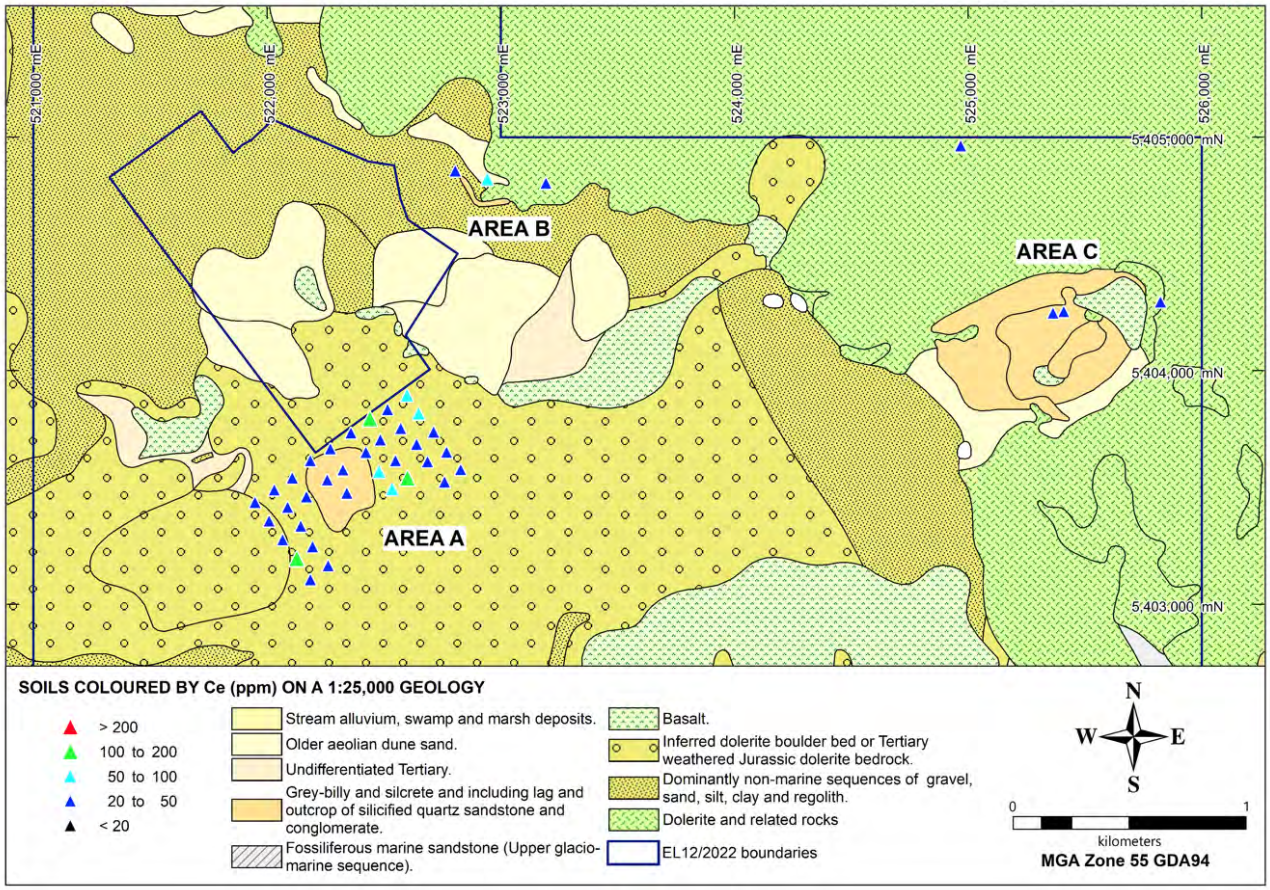

Figure 6: 2023 soils coloured by Ce (ppm) on a 1:25,000 geology map.

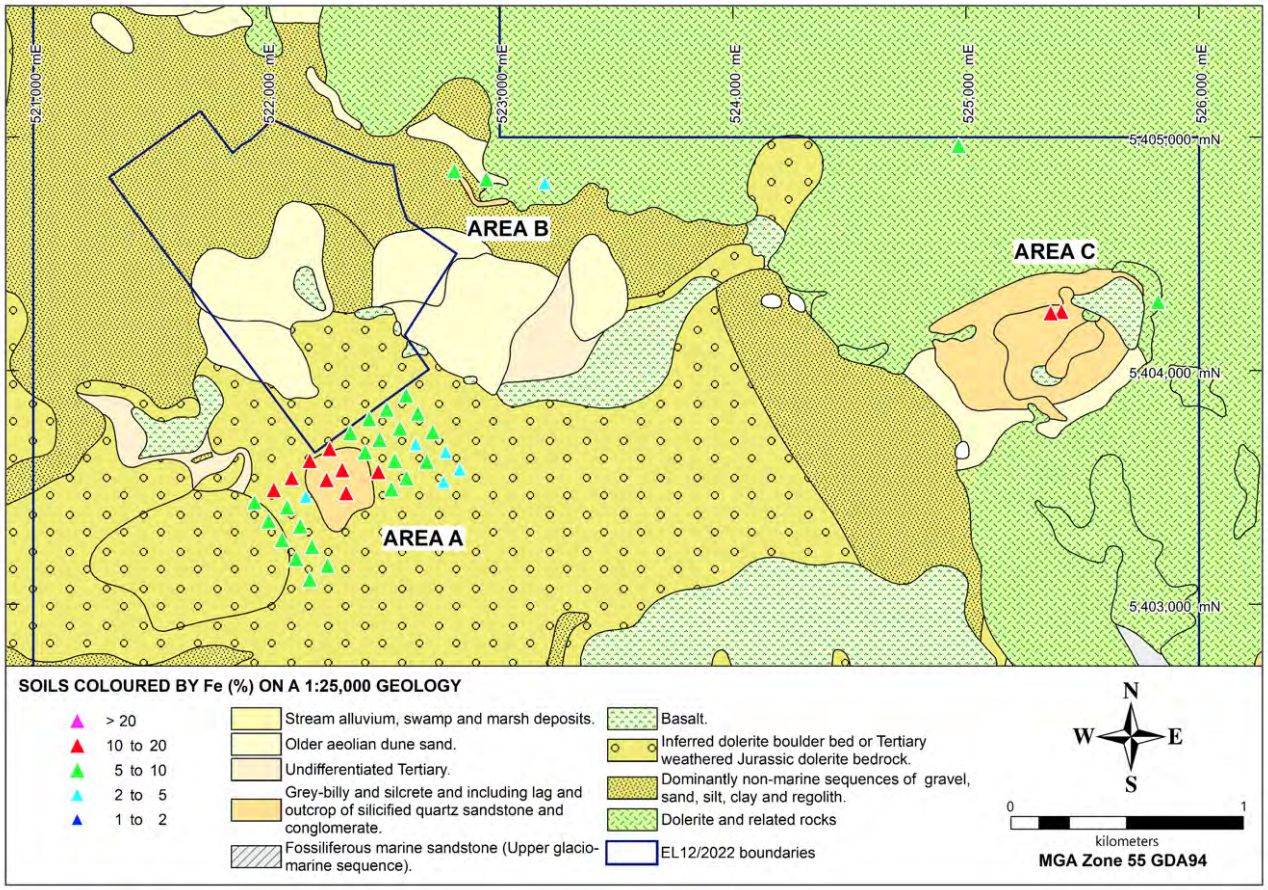

Figure 7: 2023 soils coloured by Fe (%) on a 1:25,000 geology map.

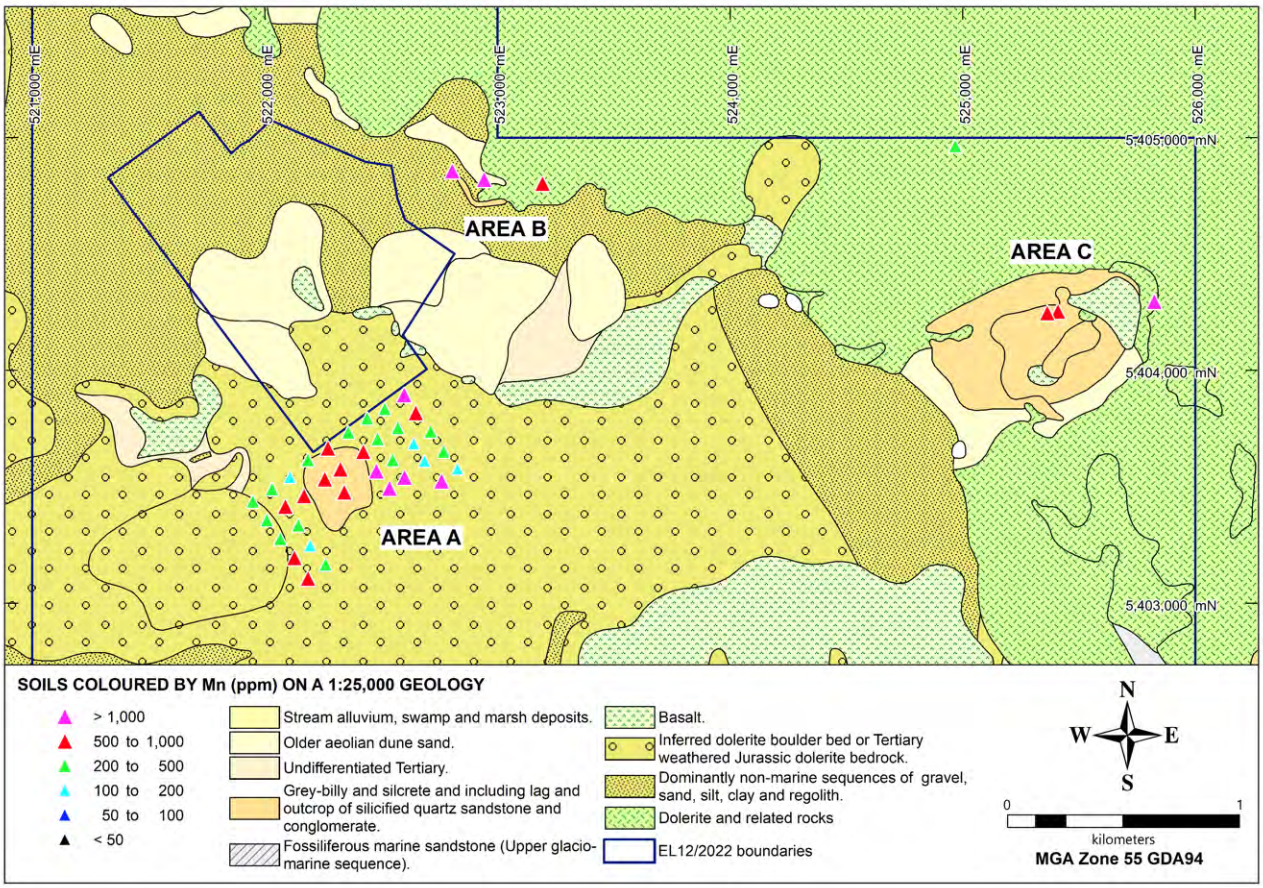

Figure 8: 2023 soils coloured by Fe (%) on a 1:25,000 geology map.

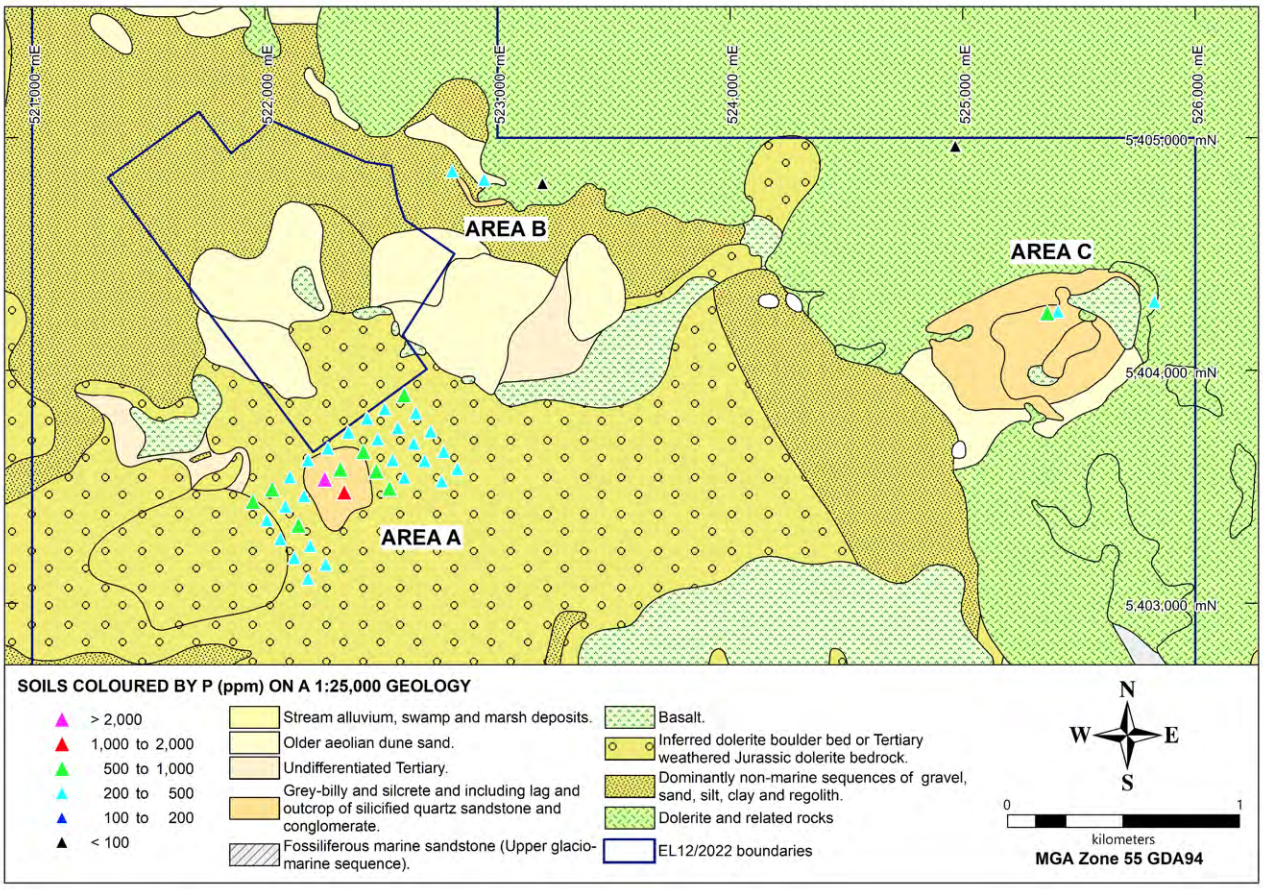

Figure 9: 2023 soils coloured by P (ppm) on a 1:25,000 geology map.

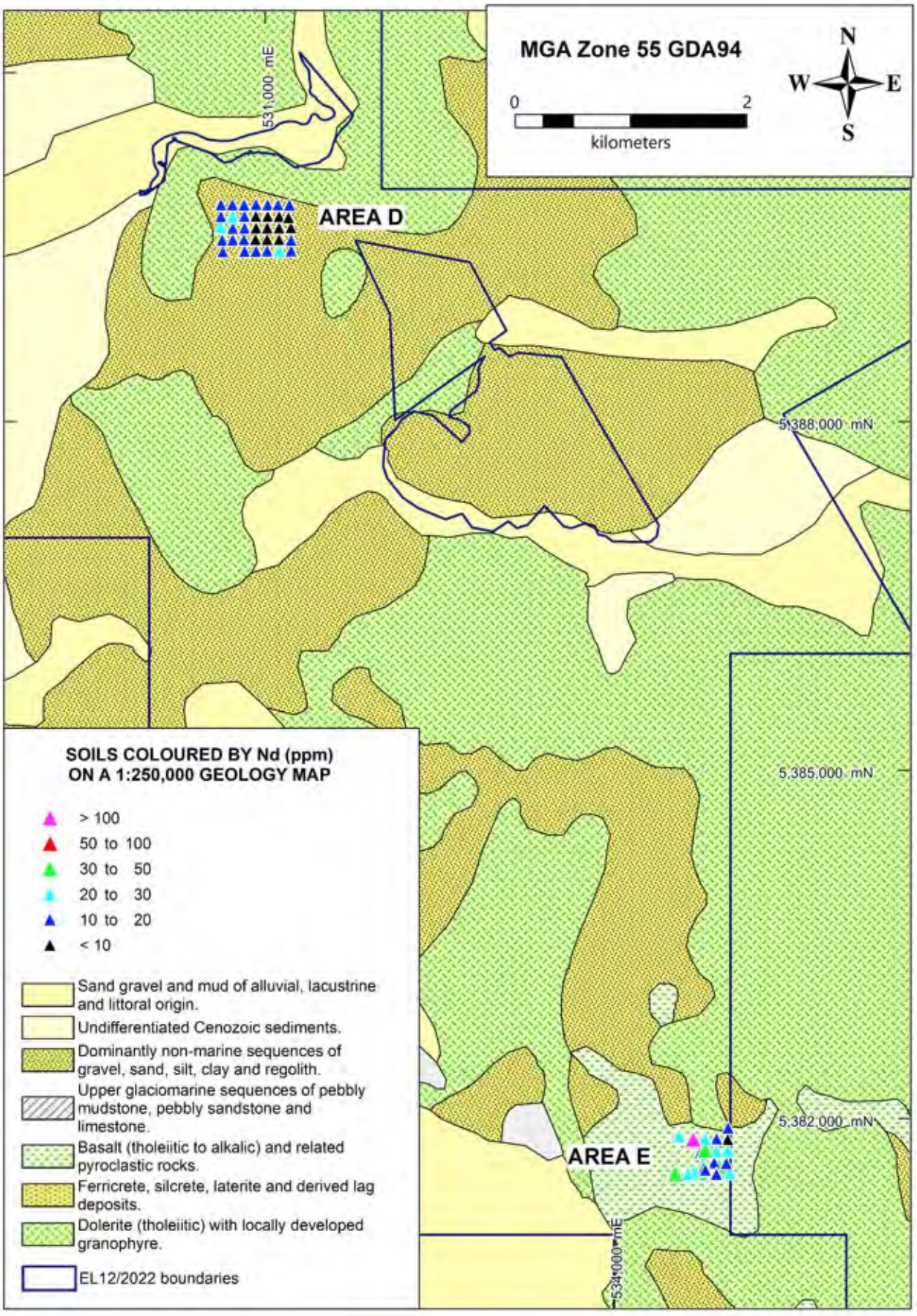

Figure 10: Nd ppm by Li borate fusion ICP-MS in Area D & E.

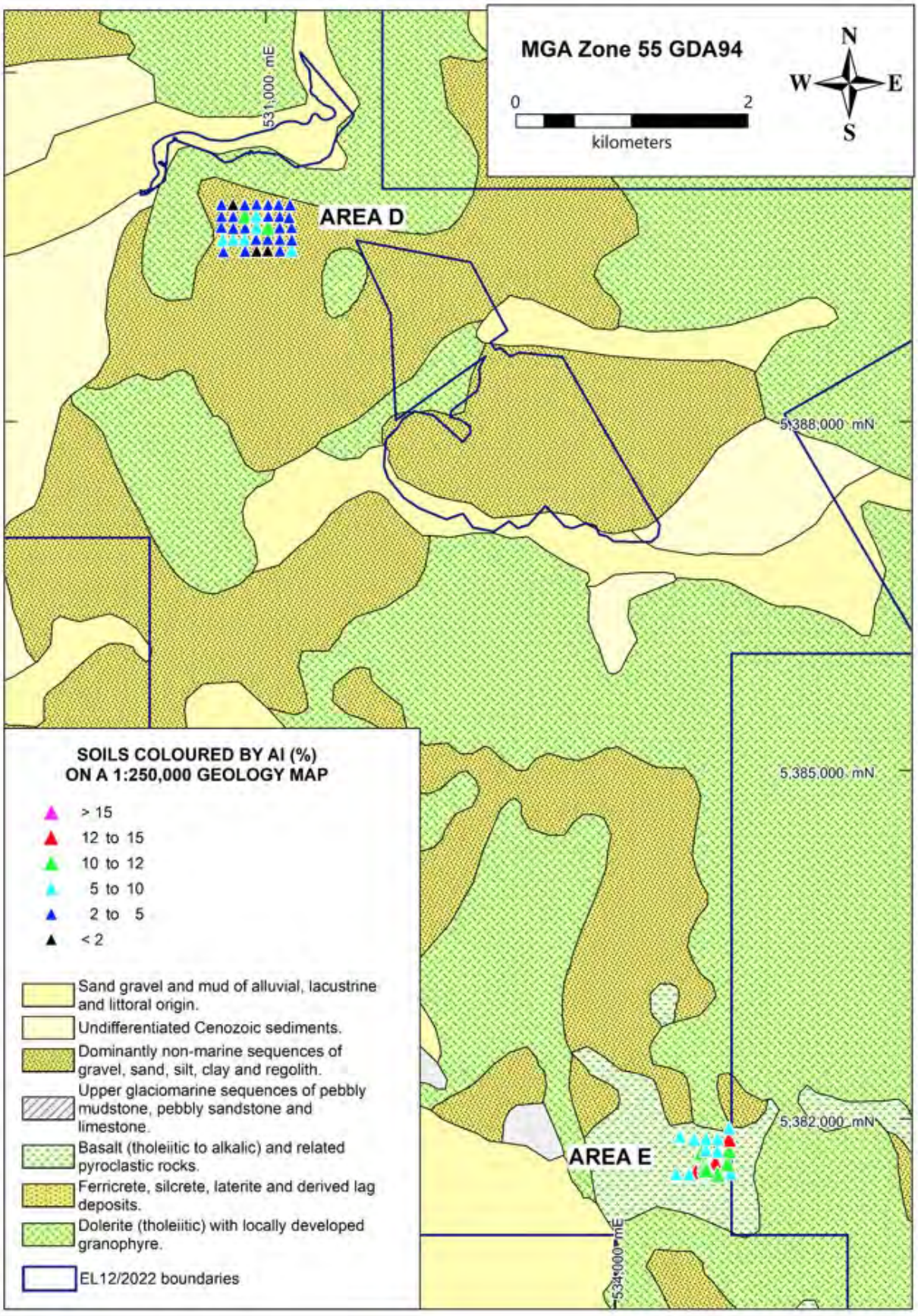

Figure 11: Al ppm by Li borate fusion ICP-MS in Area D & E on a 1:250,000 geology map.

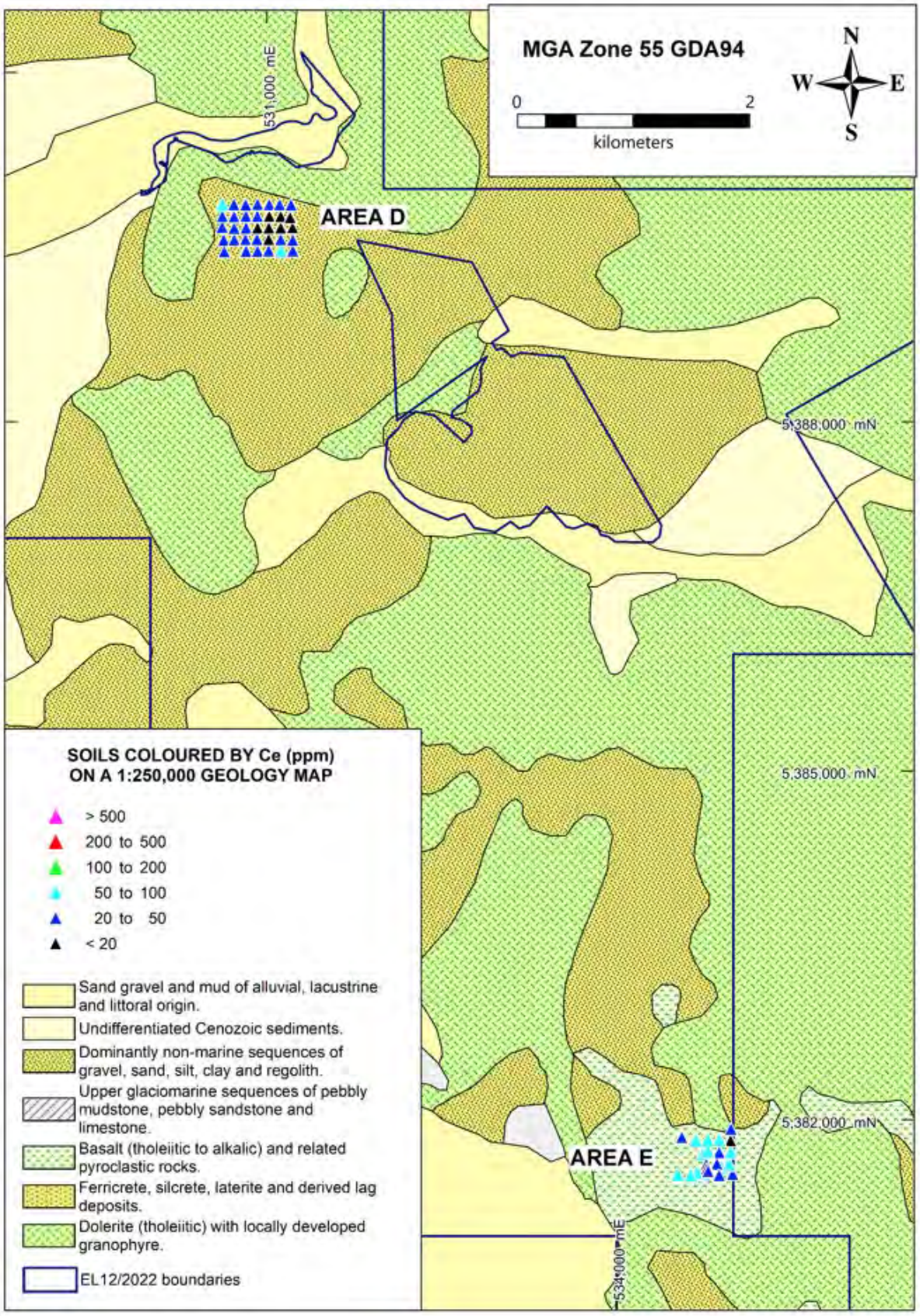

Figure 12: Ce ppm by Li borate fusion ICP-MS in Area D & E on a 1:250,000 geology map.

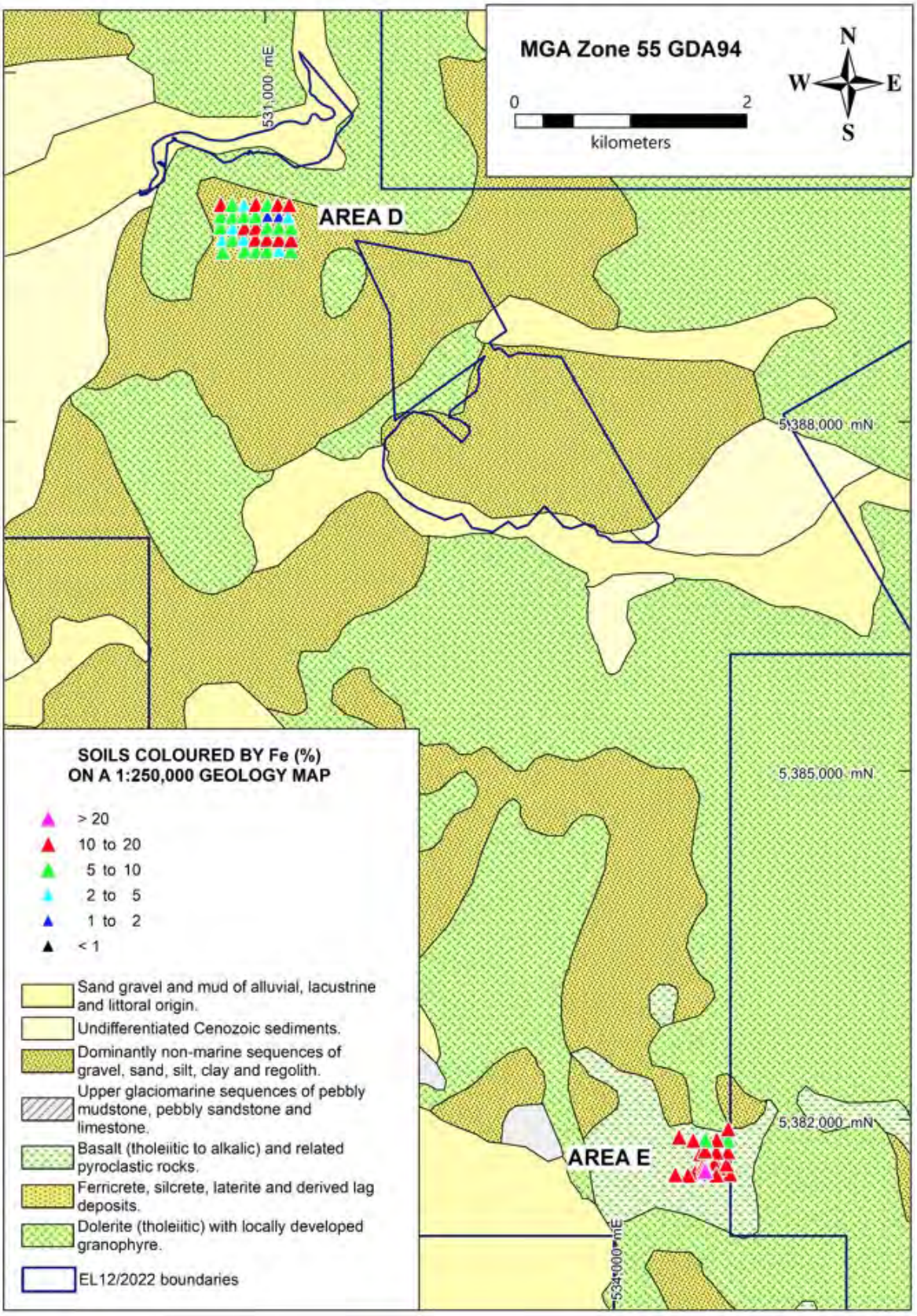

Figure 13: Fe (%) by Li borate fusion ICP-MS in Area D & E on a 1:250,000 geology map.

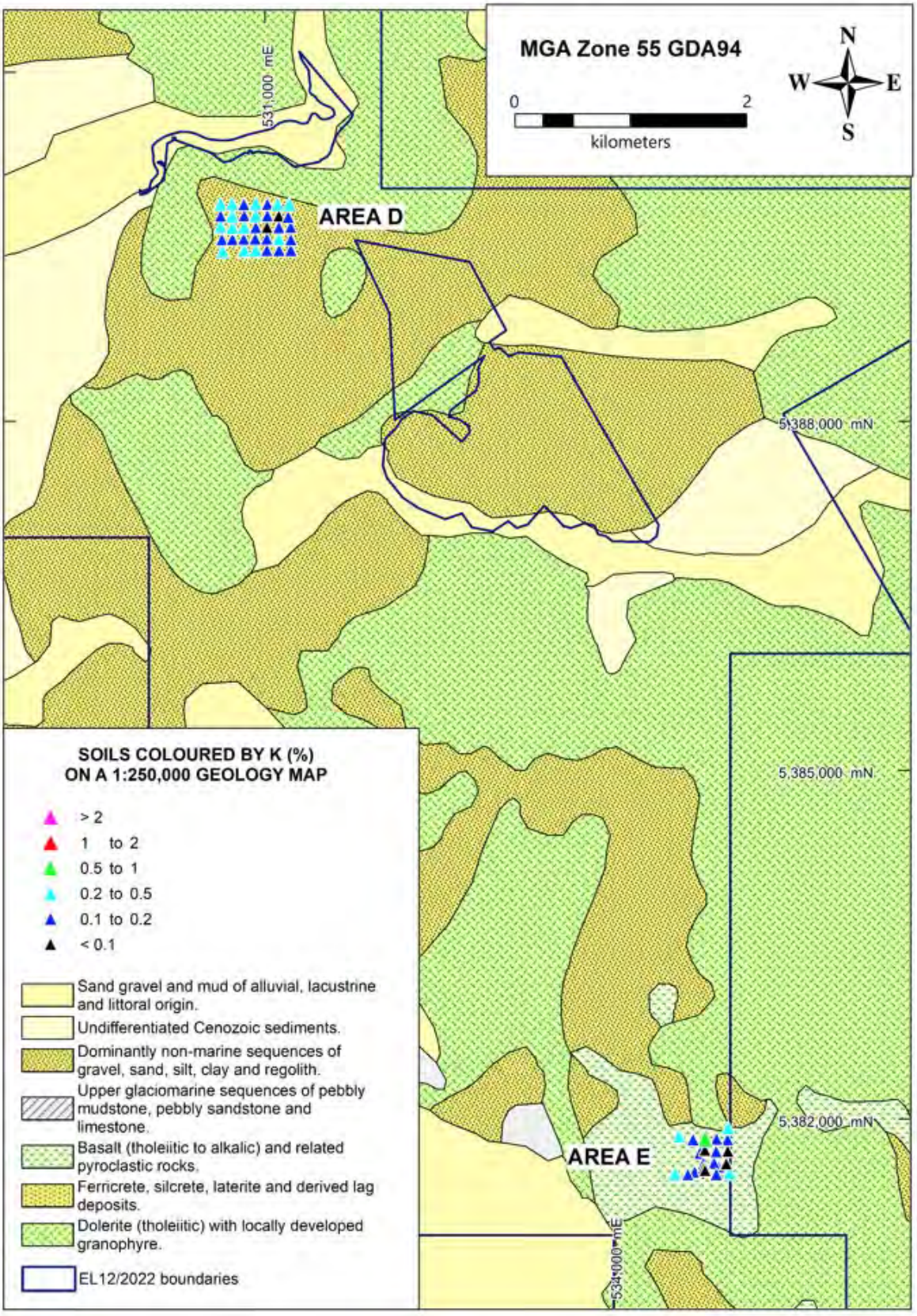

Figure 14: K (%) by Li borate fusion ICP-MS in Area D & E on a 1:250,000 geology map.

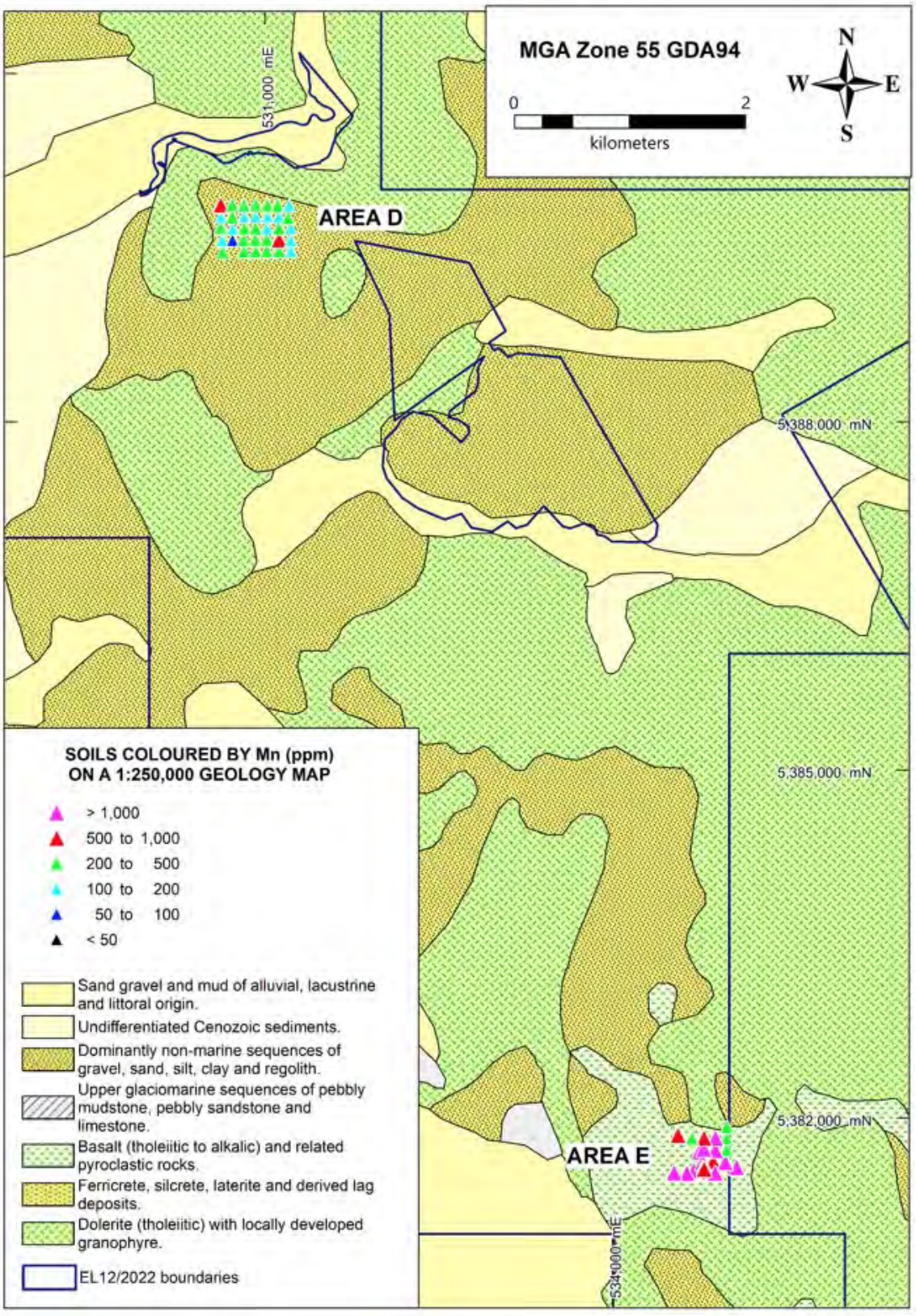

Figure 15: Mn (ppm) by Li borate fusion ICP-MS in Area D & E on a 1:250,000 geology map.

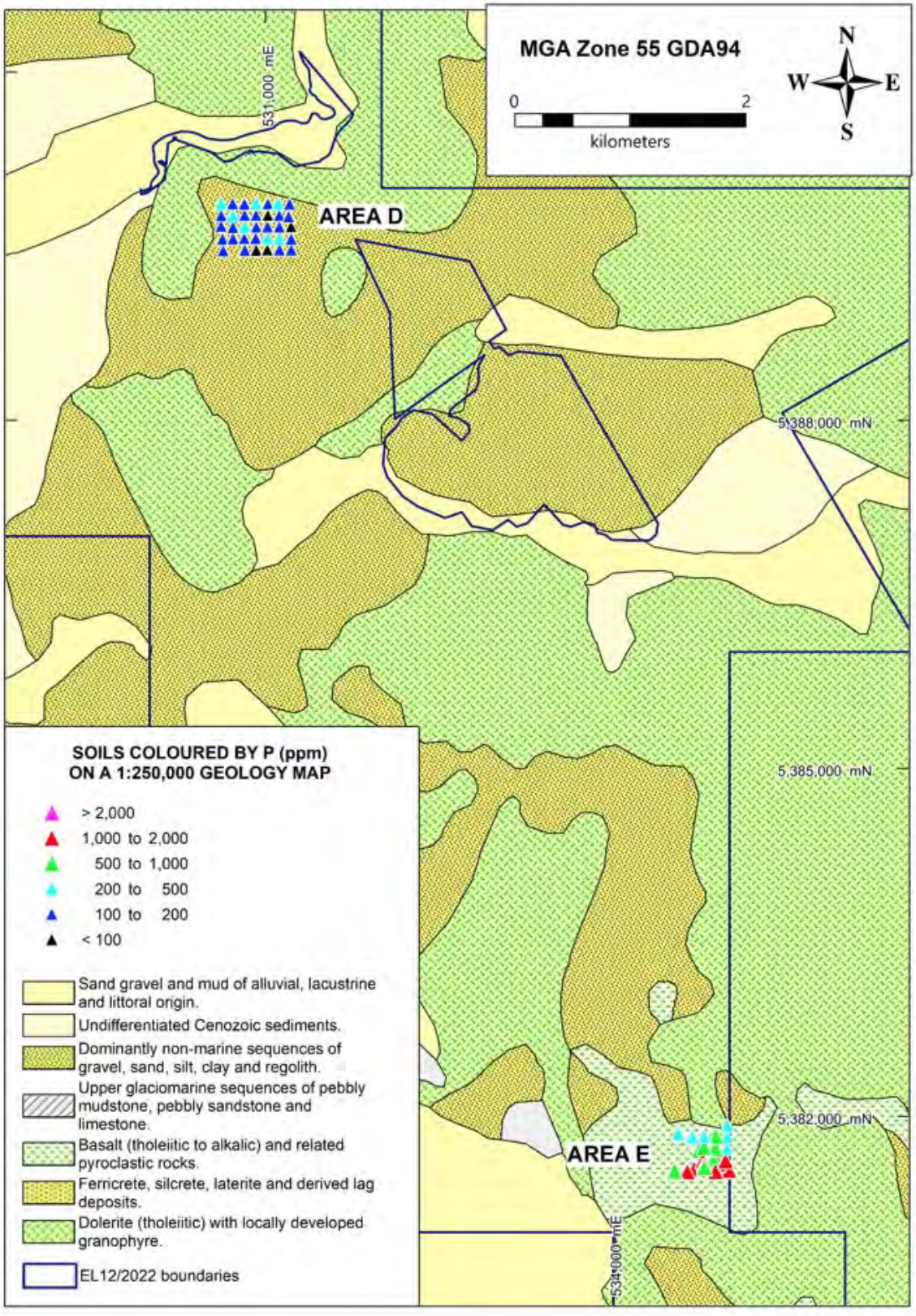

Figure 16: P (ppm) by Li borate fusion ICP-MS in Area D & E on a 1:250,000 geology map.

6.3 Assay results and data analysis

Area A has elevated Nd (>75 ppm) and Ce (>100ppm) flaking the bauxite hill near the centre of the sampling grid. The highest Nd value is immediately south of the a major vineyard exclusion (Figure 4).

Areas B and C (Figure 4) returned weakly anomalous Nd and Ce but sampling was too sparse to delineate geochemical trends.

Area D has only weakly elevated Ce and Nd towards the hill to the west of the sampled area (Figure 5). Nothing on the ground (outcrop or change in vegetation) indicated that the small rise to the west of the planned sample sites would be more prospective.

While the planned soil sampling grid in Area E could not completed because of the uncooperative farm manager elevated Nd (up to 108 ppm) was encountered flanking a mapped bauxite occurrence.

A roughly inverse spatial relationship between Nd, Ce, K and Al, Fe, P and Mn with the REE elements more elevated around the flanks of the bauxite hills and the latter elevated over the centre of the bauxitic areas may be consistent with Nd & Ce enrichment in clays zones relative to the laterite cap. Such a relationship is a positive sign for clay-hosted REE mineralisation. Higher levels of Ce relative to Nd may reflect greater primary abundance (the lightest REEs typically being most abundant) or preferential “fixing: of Ce with Mn oxides in the weathering profile (esp laterite cap).

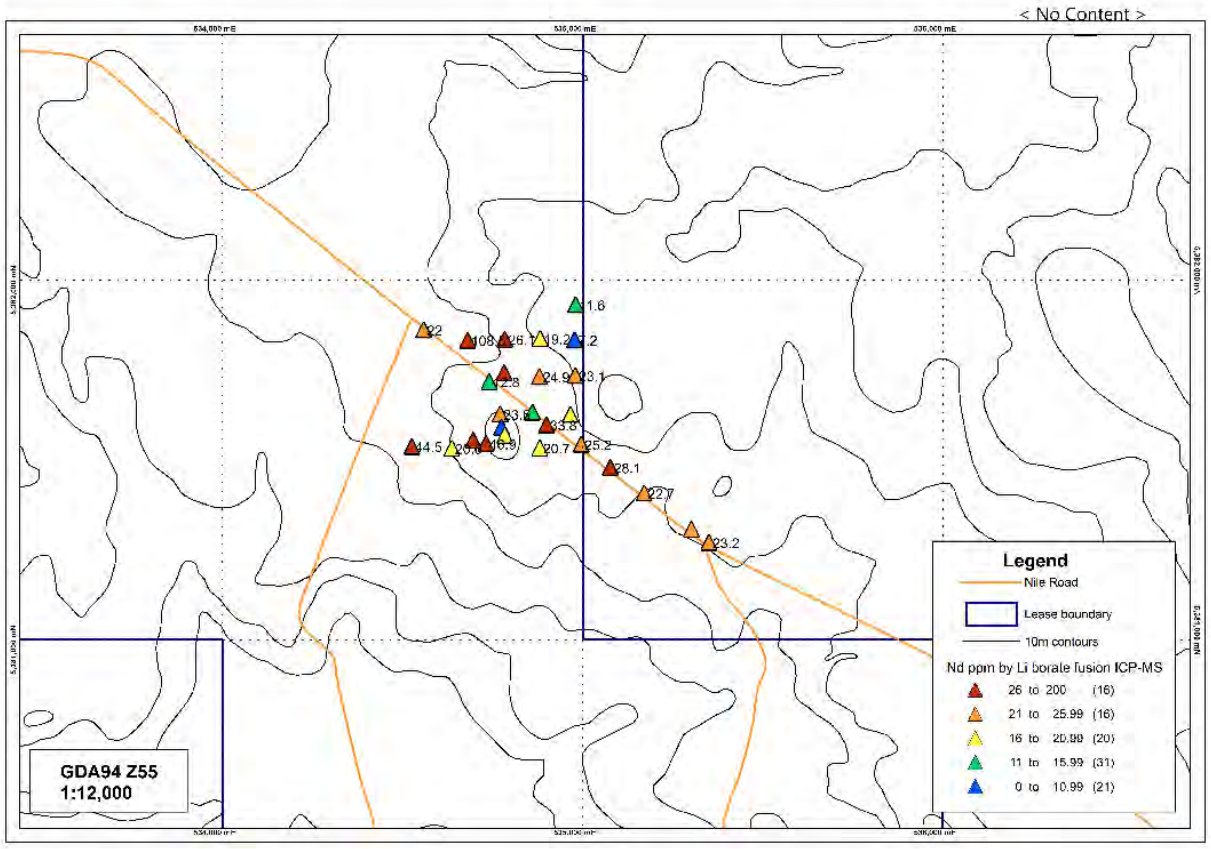

Figure 6: Nd ppm by Li borate fusion ICP-MS IN Area E in the southern part of EL12/2022.

7 Conclusions and Recommendations

While the planned soil program was significantly reduced by cultural issues the presence of significantly elevated (>100 ppm) Nd and Ce in the northern and southern targets confirm REE prospectivity of bauxite and tertiary basalt areas within EL12/2022. The elevated REEs, Nd in particular >100 ppm, flanking the bauxite areas is an encouraging sign that saprolitic clays developed over the alkaline Tertiary basalts within EL12/2022 may be REE enriched. Further soil sampling targeting deeply weathered alkaline Tertiary basalt areas within EL12/2022 should be done to confirm these preliminary observations.

Cultural and agricultural development will be a significant ongoing impediment to the exploration of EL12/2022.

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